

had scarcely emerged from the first storm area than she entered the second, and again experienced westerly winds of storm force, though of somewhat less violence.

On the 5th a small storm of some intensity appeared off the coast of Washington, at which time the Weather Bureau station at North Head reported a maximum wind velocity of 65 miles from the south, lowest pressure 29.58 inches, on the 6th.

Gales of force 7 to 10 were observed in middle latitudes and longitudes on the 6th to 8th and 11th to 14th, lowest pressure, 29.16 inches, on the 13th. On the 14th and 15th, in connection with a strong Low then covering the Gulf of Alaska and adjacent waters to the southward, several vessels reported gales of force up to 10 and pressures below 29.00 inches. The Japanese S. S. *Shidzuoka Maru* experienced the lowest pressure, 28.63 inches, with a northwest gale, in latitude $49^{\circ} 24' N.$, longitude $145^{\circ} 44' W.$, on the 14th; and the American S. S. *Dellwood* on the same date encountered an east gale, force 10, in $58^{\circ} 10' N.$, $136^{\circ} 39' W.$ On the 15th the *Dellwood* reported a barometer "down to 28.90 inches (uncorrected) for six hours," with wind still high during the morning hours, while in and near latitude $59^{\circ} 08' N.$, longitude $141^{\circ} 35' W.$

On the 22d to 24th the British S. S. *Empress of Asia* passed through one storm central near the Peninsula of Alaska, and entered another over the western Aleutians. On the 22d, in approximately latitude $52^{\circ} N.$, longitude $154^{\circ} W.$, she experienced a wind from the south, force 10, pressure 29.18 inches; on the 23d, in $52^{\circ} N.$, $164^{\circ} W.$, she observed a northwest wind, force 10, pressure 29.56 inches; and on the 24th, in $51^{\circ} N.$, $176^{\circ} W.$, a southwest wind, force 8, pressure 29.64 inches. These storms were of the Aleutian Low type.

Among the few gales thus far reported for the period April 25 to 30, the American S. S. *Stockton* experienced one from the west, force 8, in $46^{\circ} 41' N.$, $169^{\circ} 06' W.$, pressure 29.97 inches, on the 29th. On the same date the Japanese S. S. *Yokohama Maru* encountered a west-northwesterly gale, force 8, lowest pressure 29.42 inches, in $50^{\circ} 14' N.$, $139^{\circ} 04' W.$ On the 30th North Head recorded a maximum wind velocity of 58 miles from the south, in connection with a storm area central to the westward of British Columbia.

On the 26th of April Observer Dumaresq, of the American S. S. *Atlanta City*, San Pedro toward Yoko-

hama, the wind being light at the time, witnessed a peculiar condition which he thus describes:

The sharpest shift of wind and sea I have ever seen occurred April 26, at 4 p. m. in latitude $34^{\circ} 19' N.$, longitude $150^{\circ} 20' E.$ Wind and sea had been SW. all day, and as suddenly as though a fan had been turned both wind and sea shifted to NW. We could plainly see a narrow stretch of confused sea where the two met.

During the greater part of the month the series of low-pressure areas which dominated the weather over the Aleutian region and over a wide stretch of ocean from the Peninsula of Alaska southeastward, were more energetic even than during March. In general they formed two centers of activity, one of which may be placed nearly over Dutch Harbor on the west and the other over the northern portion of the Gulf of Alaska on the east.

The North Pacific high-pressure area, normally central to the northeast of Hawaii, was generally well developed after the 10th of the month. Prior to that it was distorted and shallow, with low-pressure areas occupying a portion of its normal area on the northeast or northwest. At the close of the month its center had moved to the westward and northward, with a crest of 30.50 inches near latitude $40^{\circ} N.$, longitude $155^{\circ} W.$

Pressure was below normal over the eastern part of the ocean, as shown by observations at the island stations. In this respect conditions were similar to those of the preceding month. In April, however, the greatest relative deficiency was at Dutch Harbor (-0.28 inch), whereas in March it was at Honolulu (0.07 inch). The average pressure at Dutch Harbor, based on p. m. reports, was 29.57 inches. The highest pressure, 30.16 inches occurred on the 25th; the lowest, 28.82 inches, on the 8th. Absolute range, 1.34 inches. At Honolulu the mean p. m. pressure was 30.02 inches, or 0.04 inch below normal. The highest pressure, 30.15 inches, occurred on the 12th; the lowest, 29.79, on the 25th. At Midway Island the mean p. m. pressure was 30.11 inches, or 0.02 inch below normal. The highest pressure, 30.28 inches, occurred on the 28th; the lowest, 29.88, on the 29th and 30th.

Fog was observed almost daily over the northern and central routes both east and west of the 180th meridian, but was of particularly frequent occurrence after the middle of the month. It was noted on the China coast on several days as far south as Swatow and Hongkong.

DETAILS OF THE WEATHER IN THE UNITED STATES.

GENERAL CONDITIONS.

ALFRED J. HENRY.

Aside from the variability characteristic of a transition month, the weather of April, 1923, presented no distinctive features of consequence.

Many secondary cyclonic systems had their origin over the southern Plateau and Rocky Mountain region, and when such is the case the anticyclones almost invariably appear in Canadian Provinces and move east-southeast as was the case in the current month—see Charts I and II. The usual details follow.

CYCLONES AND ANTICYCLONES.

By W. P. DAY.

Fifteen low-pressure areas developed over the south and southwest or entered the country on the Pacific coast. This is an unusual number for the season of the year and

would be rather excessive even for a winter month. However, the dampening effect on the movements of the cyclones and anticyclones, which is a normal occurrence in April, was quite noticeable before the end of the month. This slowing up, and in some cases reversal of the general circulation, is due to the change in pressure distribution over land and water areas. This change is slow and masked by the passing cyclones and anticyclones; but as the continents rapidly warm, we see them change from areas covered normally by high pressure to areas of indifferent or low pressure, and at the same time the pressure is rising over the relatively colder water areas.

FREE-AIR SUMMARY.

By L. T. SAMUELS, Meteorologist.

Free-air conditions for the month averaged in most cases close to their normal values. (See Table 1.) Negative temperature departures obtained at nearly all levels at Broken Arrow, Due West, and Royal Center,

while positive departures were found at Drexel, Ellendale, and Groesbeck.

Relative-humidity departures were particularly small and mostly negative with the exception of Groesbeck, where positive departures prevailed throughout, becoming larger with increasing altitude.

Vapor-pressure departures were in general agreement with those for temperature.

In Table 2 are shown the resultant wind velocities and directions for the month and their normal values. It will be observed that the deviations from the normals are but slight in most cases. The resultant velocities at the northern stations indicated mostly an excess, however, while at the southern stations the velocities were below the normals.

At this season of the year when horizontal temperature gradients become less marked than in winter, occurrences of extreme wind velocities in the free-air decrease proportionally, while it is found that easterly winds extend to greater altitudes than during the colder season. Winds of 40 m. p. s. or more were observed as follows:

Station.	Date.	Velocity.	Direction.	Altitude.
		<i>m. p. s.</i>		<i>m.</i>
Camp Alfred Vail, N. J.	30	46	W.	1,000
Due West, S. C.	5	44	WSW.	2,500
Mitchel Field, N. Y.	24	48	NNW.	2,000

The following stations reported winds at 5,000 meters elevation, or higher, having an east component:

Station.	Date.	Velocity.	Direction.	Altitude.
		<i>m. p. s.</i>		<i>m.</i>
Broken Arrow, Okla.	18	6	ENE.	10,000
Drexel, Neb.	28	7	NE.	9,000
Ellendale, N. Dak.	17	26	NNE.	10,000
Lansing, Mich.	17	26	NNE.	5,000
Camp Lewis, Wash.	2	7	SSE.	5,000
Do.	4	3	NE.	5,000
Do.	23	18	NNE.	8,000
Do.	24	24	NNE.	7,000
Do.	25	13	NE.	6,000
San Francisco, Calif.	24	6	E.	6,000
Do.	25	12	NNE.	6,000

The pilot-balloon observations made at Ellendale on the 17th and 18th are of special interest in that they show a complete reversal of wind streams occurring at great elevations within a period of 24 hours. On the morning of the 17th with an extensive high central over Iowa, the surface winds were south-southwesterly at this station veering with increasing altitude to northerly at 3,000 meters, remaining northerly and north-northeasterly to 10,000 meters. On the morning of the 18th the high was central to the southward over the lower Mississippi River Valley and a low was approaching from the Canadian Northwest. At this time south-southwesterly winds extended from the surface to 10,000 meters indicating thereby the wide variations which may occur in short intervals of time in the so-called "upper west-erlies." In continuation of the characteristic effects produced by these upper air currents it is of interest to note the temperature distribution prevailing in the higher levels on the 18th (surface-pressure distribution at this time described above). On this date simultaneous kite observations were made at Ellendale, Drexel, Royal Center, and Due West and the temperatures observed

at each station at corresponding elevations above the sea are given in the following table:

Station.	Sur-face.	Altitudes in meters above M. S. L.									
		250	500	750	1,000	1,250	1,500	2,000	2,500	3,000	3,500
Ellendale.	11.3	.....	11.8	13.2	15.6	14.8	13.0	9.2	6.0	2.4	-1.4
Drexel.	11.5	.....	12.3	11.0	12.4	11.6	10.0	5.9	4.0	1.0	-2.4
Royal Center.	11.0	10.7	9.3	7.2	4.7	2.5	0.8	-0.8	-2.3	.....	.....
Due West.	10.5	10.1	7.4	5.2	3.5	1.9	0.4	-3.5	-6.9	-9.6	-12.6

The persistent decrease in the temperature from Ellendale to Due West is striking and must, it seems, be attributed to the source of the air overrunning these places. The temperature in the free air appears unquestionably as a function of the source of the air supply.

The unusually high altitude of 5,725 meters above the ground was reached during a kite flight at Groesbeck on the 14th. This was made possible by the favorable winds blowing from the southeastern quadrant of an elongated high-pressure area extending in a NW-SE direction across the western half of the country. The temperature gradient for this observation showed a lapse rate from the surface to 1,000 meters equal to that found for the normal for the month, while from 2,000 to 5,000 meters the lapse rate greatly exceeded the monthly normal at this station. The wind velocity from the surface to the highest level reached did not exceed 18 m. p. s., thus making conditions ideal for kite flying.

The following note by the official in charge of the Due West station was made relative to a series of kite flights in progress at that station on the 23d.

During the fourth flight on April 23d, the kites were caught in a thundersquall and beaten down almost to the ground. While the wire was down over the trees and on the ground, a ball of fire came in over the wire and exploded in the reel house under the feet of one of the men on duty at the time. There was no damage to the reel house and the men were unhurt. Distant thunder was heard in the south a few minutes after the explosion and the kites were seen to have broken away. It is thought that lightning struck a tree over which the kite wire was resting and that the lightning went to the ground through the tree and the reel. Only a few places were found in the wire that had been fused and the end of the wire to which the two leading kites were attached showed fusing where it probably rested over the tree that was struck.

TABLE 1.—Free-air temperatures, relative humidities, and vapor pressures during April, 1923.

TEMPERATURE (°C.).

Altitude. m. s. l. (meters).	Broken Arrow, Okla. (233 meters.)		Drexel, Nebr. (396 meters.)		Due West, S. C. (217 meters.)		Ellendale, N. Dak. (444 meters.)		Groesbeck, Tex. (141 meters.)		Royal Center, Ind. (225 meters.)	
	Mean.		Mean.		Mean.		Mean.		Mean.		Mean.	
	De- part- ure from 5-year mean.	De- part- ure from 5-year mean.	De- part- ure from 5-year mean.	De- part- ure from 5-year mean.	De- part- ure from 5-year mean.	De- part- ure from 5-year mean.	De- part- ure from 5-year mean.	De- part- ure from 5-year mean.	De- part- ure from 5-year mean.	De- part- ure from 5-year mean.	De- part- ure from 5-year mean.	De- part- ure from 5-year mean.
Surface..	14.8	-0.3	9.0	+0.7	16.7	-0.9	4.7	-0.5	19.4	+1.0	9.5	-1.3
250.....	14.7	-0.3	.....	.....	16.4	-0.8	.....	.....	18.6	+0.9	9.2	-1.4
500.....	13.0	-0.2	8.2	+0.6	14.3	-0.5	4.6	-0.3	18.9	+0.9	6.5	-1.7
750.....	11.5	-0.3	6.7	+0.8	12.5	-0.5	3.6	+0.2	15.8	+1.0	5.3	-1.4
1,000.....	10.6	-0.2	5.9	+1.0	11.2	-0.4	2.5	+0.3	14.8	+0.9	4.1	-1.3
1,250.....	9.6	-0.1	5.4	+1.4	10.0	-0.3	1.7	+0.6	13.7	+0.7	3.0	-1.1
1,500.....	8.4	-0.2	4.7	+1.7	8.9	-0.1	0.7	+0.7	12.9	+0.6	1.9	-1.1
2,000.....	5.8	-0.3	2.6	+1.7	5.9	-0.3	-1.4	+0.9	10.3	+0.1	-0.3	-1.1
2,500.....	2.6	-0.6	-0.4	+1.2	3.4	-0.4	-3.9	+0.9	7.3	-0.2	-3.0	-1.2
3,000.....	-0.5	-0.5	-3.4	+0.9	0.5	-1.0	-6.9	+0.6	4.5	-0.3	-5.3	-0.7
3,500.....	-3.3	-0.1	-6.4	+1.0	-1.8	-0.8	-8.9	+0.4	1.4	-0.6	-7.4	-0.2
4,000.....	-5.7	+0.3	-9.4	+1.2	-4.7	-1.4	-12.4	+1.0	-2.0	-0.6	.....	.....
4,500.....	.....	.....	.....	.....	.....	.....	-15.3	+0.9	-5.0	.....	.....	.....
5,000.....	.....	.....	.....	.....	.....	.....	.....	.....	-7.9	-0.4	.....	.....

TABLE 1.—Free-air temperatures, relative humidities, and vapor pressures during April, 1923—Continued.

Altitude, m. s. l. (meters).	RELATIVE HUMIDITY (%).											
	Broken Arrow, Okla. (233 meters.)		Drexel, Nebr. (396 meters.)		Due West, S. C. (217 meters.)		Ellendale, N. Dak. (444 meters.)		Groesbeck, Tex. (141 meters.)		Royal Center, Ind. (225 meters.)	
	Mean.	De-parture from 5-year mean.	Mean.	De-parture from 8-year mean.	Mean.	De-parture from 3-year mean.	Mean.	De-parture from 6-year mean.	Mean.	De-parture from 5-year mean.	Mean.	De-parture from 5-year mean.
Surface..	65	0	65	-1	60	0	71	+4	71	+1	58	-5
250.....	65	0	65	0	60	0	71	+2	71	+2	58	-5
500.....	63	-1	65	-1	61	0	69	+3	70	+3	59	-3
750.....	62	-1	65	0	61	-1	63	-1	70	+5	58	-3
1,000....	60	0	62	-1	60	-2	58	-4	67	+7	57	-3
1,250....	58	0	60	-2	59	-2	55	-5	64	+9	55	-4
1,500....	58	+2	60	0	55	-4	52	-6	58	+8	55	-2
2,000....	54	+3	58	0	53	-2	52	-4	55	+10	56	+3
2,500....	52	+3	60	+2	48	-1	49	-5	58	+14	59	+8
3,000....	53	+3	62	+3	46	+3	50	-4	56	+15	60	+10
3,500....	59	+3	62	+3	42	+4	45	-9	53	+10	56	+5
4,000....	49	-3	57	-3	41	+3	45	-9	61	+13	59	+12
4,500....							54	-2	59	+12		
5,000....									73	+12		

TABLE 1.—Free-air temperatures, relative humidities, and vapor pressures during April, 1923—Continued.

Altitude, m. s. l. (meters).	VAPOR PRESSURE (mb.).											
	Broken Arrow, Okla. (233 meters.)		Drexel, Nebr. (396 meters.)		Due West, S. C. (217 meters.)		Ellendale, N. Dak. (444 meters.)		Groesbeck, Tex. (141 meters.)		Royal Center, Ind. (225 meters.)	
	Mean.	De-parture from 5-year mean.	Mean.	De-parture from 8-year mean.	Mean.	De-parture from 3-year mean.	Mean.	De-parture from 6-year mean.	Mean.	De-parture from 5-year mean.	Mean.	De-parture from 5-year mean.
Surface..	11.26	-0.40	7.42	+0.06	11.94	-0.73	6.14	+0.23	16.58	+1.32	6.91	-1.83
250.....	11.17	-0.39	11.74	-0.69	15.88	+1.39	6.81	-1.78	15.88	+1.39	6.81	-1.78
500.....	9.86	-0.40	7.05	+0.04	10.50	-0.41	5.93	+0.19	14.20	+1.50	5.75	-1.57
750.....	8.78	-0.39	6.38	+0.11	9.49	-0.41	4.98	-0.04	13.19	+1.53	5.17	-1.33
1,000....	8.00	-0.24	5.97	+0.22	8.66	-0.45	4.21	-0.26	11.82	+1.95	4.69	-1.16
1,250....	7.15	-0.24	5.48	+0.29	7.86	-0.39	3.74	-0.27	10.51	+1.96	4.22	-1.05
1,500....	6.46	-0.13	5.23	+0.52	6.59	-0.65	3.32	-0.28	8.97	+1.70	3.92	-0.83
2,000....	4.99	-0.12	4.31	+0.47	5.04	-0.35	2.72	-0.18	7.27	+1.71	3.27	-0.53
2,500....	3.85	-0.25	3.57	+0.45	3.82	+0.01	2.11	-0.20	6.43	+1.91	2.80	-0.20
3,000....	3.25	-0.21	2.96	+0.35	2.96	+0.21	1.71	-0.21	5.37	+1.85	2.38	+0.02
3,500....	2.98	-0.17	2.40	+0.22	2.42	+0.32	1.29	-0.32	4.50	+1.63	1.92	-0.09
4,000....	2.04	-0.33	1.78	+0.05	1.93	+0.18	1.15	-0.20	4.24	+1.86		
4,500....					1.16	+0.08			3.53	+1.73		
5,000....									3.53	+1.73		

TABLE 2.—Free-air resultant winds (m. p. s.) during April, 1923.

Altitude, m. s. l. (meters).	Broken Arrow, Okla. (233 meters.)				Drexel, Nebr. (396 meters.)				Due West, S. C. (217 meters.)				Ellendale, N. Dak. (444 meters.)				Groesbeck, Tex. (141 meters.)				Royal Center, Ind. (225 meters.)			
	Mean.		5-year mean.		Mean.		8-year mean.		Mean.		3-year mean.		Mean.		6-year mean.		Mean.		5-year mean.		Mean.		5-year mean.	
	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
Surface.....	S. 19° E.	1.6	S. 5° W.	2.9	S. 52° W.	1.3	S. 71° E.	0.4	S. 61° W.	1.7	S. 79° W.	1.6	N. 1° E.	1.2	N. 9° W.	1.6	S. 20° E.	2.3	S. 4° E.	2.5	S. 83° W.	2.4	S. 43° W.	2.6
250.....	S. 19° E.	1.6	S. 6° W.	3.0	S. 47° W.	1.8	S. 57° E.	0.5	S. 53° W.	1.9	S. 77° W.	1.8	S. 1° E.	1.2	N. 9° W.	1.6	S. 19° E.	2.9	S. 4° E.	3.2	S. 61° W.	2.5	S. 43° W.	2.7
500.....	S. 13° E.	2.7	S. 13° W.	4.4	S. 47° W.	2.0	S. 32° W.	0.1	S. 54° W.	3.1	S. 65° W.	3.1	N. 6° E.	1.1	N. 10° W.	1.4	S. 7° E.	4.0	S. 4° W.	4.8	S. 56° W.	4.5	S. 41° W.	4.6
750.....	S. 3° E.	3.2	S. 18° W.	5.5	S. 68° W.	2.6	S. 61° W.	0.7	S. 58° W.	5.4	S. 60° W.	5.2	N. 9° W.	2.4	N. 45° W.	1.0	S. 21° W.	4.3	S. 13° W.	5.5	S. 53° W.	5.1	S. 44° W.	6.0
1,000....	S. 28° W.	2.8	S. 27° W.	6.1	S. 69° W.	4.0	S. 61° W.	0.7	S. 58° W.	5.4	S. 60° W.	5.2	N. 9° W.	2.4	N. 45° W.	1.0	S. 21° W.	4.3	S. 13° W.	5.5	S. 53° W.	5.1	S. 44° W.	6.0
1,250....	S. 49° W.	3.6	S. 37° W.	6.3	S. 74° W.	4.6	S. 76° W.	1.5	S. 04° W.	7.3	S. 67° W.	7.4	N. 56° W.	3.6	N. 50° W.	1.8	S. 38° W.	5.5	S. 33° W.	6.9	S. 72° W.	6.2	S. 61° W.	6.9
1,500....	S. 03° W.	3.9	S. 33° W.	7.0	S. 83° W.	6.3	S. 82° W.	2.3	S. 05° W.	9.4	S. 68° W.	9.4	N. 53° W.	4.0	N. 52° W.	2.2	S. 50° W.	7.5	N. 73° W.	7.6	N. 73° W.	7.6	N. 73° W.	7.3
2,000....	S. 79° W.	5.8	S. 01° W.	8.0	S. 88° W.	7.4	W.	4.0	S. 76° W.	10.3	S. 79° W.	9.0	N. 58° W.	4.8	N. 67° W.	2.5	S. 58° W.	7.8	S. 49° W.	8.0	N. 64° W.	6.9	S. 80° W.	8.0
2,500....	S. 34° W.	5.3	S. 70° W.	8.7	S. 84° W.	7.8	W.	5.8	S. 34° W.	10.2	S. 82° W.	10.4	N. 63° W.	6.3	N. 74° W.	3.7	S. 70° W.	8.3	S. 56° W.	9.5	N. 45° W.	9.0	S. 83° W.	8.3
3,000....	N. 88° W.	6.2	S. 79° W.	8.4	W.	10.8	N. 83° W.	8.5	N. 83° W.	10.7	S. 86° W.	11.6	N. 76° W.	5.0	S. 70° W.	5.0	S. 70° W.	10.5	S. 61° W.	11.0	N. 32° W.	10.4	S. 84° W.	10.6
3,500....	N. 65° W.	9.5	S. 86° W.	11.7	S. 80° W.	13.0	S. 85° W.	10.4	N. 69° W.	10.0	N. 84° W.	11.5	N. 83° W.	10.3	N. 79° W.	6.7	S. 81° W.	10.5	S. 69° W.	10.8	N. 22° W.	22.8	S. 76° W.	11.8
4,000....	W.	13.8	S. 80° W.	14.4	N. 80° W.	15.2	N. 87° W.	12.8	N. 65° W.	12.2	N. 72° W.	13.9	N. 39° W.	6.3	N. 04° W.	7.8	S. 70° W.	9.4	S. 83° W.	13.3				
4,500....	S. 67° W.	24.5	S. 76° W.	18.6	N. 45° W.	20.7	N. 75° W.	13.3	N. 37° W.	9.5	N. 42° W.	13.7	N.	22.0	N. 55° W.	8.5	S. 66° W.	12.0	S. 73° W.	14.4				
5,000....													N.	26.7	N. 56° W.	15.9	N. 89° W.	13.8	N. 89° W.	13.8				

THE WEATHER ELEMENTS.

By P. C. DAY, Meteorologist, in Charge of Division.

PRESSURE AND WINDS.

The outstanding feature of the weather for April, 1923, was the marked anticyclone that had advanced into the central valleys by the end of March and to the more eastern districts by April 1 and off the Atlantic coast during the following 24 hours. This anticyclone was of unusual strength for a mid-spring month and dominated the weather over practically all districts between the Rocky Mountains and the Atlantic coast during its movement eastward. Clear skies and favorable conditions for radiation prevailed, and over much of the area mentioned the accompanying night temperatures were the lowest ever observed so late in spring.

Aside from the above the anticyclones of the month were usually unimportant, although a moderate area of high pressure with sharp changes in temperature moved from the upper Missouri Valley into the Great Plains on the 7th and 8th, and thence to the more eastern districts within the following 48 hours. Later in the month anticyclonic conditions prevailed over the more northern districts, particularly about the 23d and for several

succeeding days, when a high-pressure area of wide extent, but lacking the strength of that at the beginning of the month and without the marked effect on temperatures usually expected, moved from the near Northwest into the Lake region and thence eastward, reaching the Atlantic coast districts about the 26th.

The cyclones of the month were mainly active only over short paths, and these were largely confined to the central and eastern districts, the storms usually losing strength as they approached the Atlantic coast.

An exception to this, however, is noted in the case of a cyclone that developed in the far Northwest on the 6th and moved to the middle Plains by the morning of the 7th and to the Great Lakes, St. Lawrence Valley, and Canadian Maritime Provinces within the following 48 hours. The precipitation attending this cyclone was mainly light and lacked the even distribution usually expected, large areas near the center of the disturbance at times receiving little or no precipitation.

A cyclone of only moderate proportions, but which gave abundant precipitation over wide areas in the Southern and Eastern States, but losing force as it approached the coast, moved slowly from Texas on the morning of the 12th to the more eastern districts during the following few days. This cyclone brought heavy